



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

SP

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,569	07/01/2004	Cyrielle Cheng	0513-1111	5217
7590	03/25/2005			EXAMINER
DYKEMA GOSSETT PLLC 39577 Woodward Avenue Suite 300 Bloomfield Hill, MI 48304			BRINSON, PATRICK F	
			ART UNIT	PAPER NUMBER
			3754	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/500,569	CHENG ET AL. <i>(CD)</i>
	Examiner	Art Unit
	Patrick F. Brinson	3754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-8 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>7/1/2004</u> .	6) <input type="checkbox"/> Other: ____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 5,588,468 to **Pfleger** in view of U.S. 4,312,383 to **Kleykamp**.

The patent to **Pfleger** discloses a conduit for transporting automobile fluids, the conduit comprising a multi-layer tube comprising an inner layer (4) based on a fluorinated thermoplastic material, a corrugated outer tube (2) which is in contact with the inner tube, which is made of a thermoplastic material based on polyamide and means (3) for connecting together the inner and outer layers, as recited in claim 1. The burst-resistant external layer (2) is a single layer tube and preferably consists of polyamides selected from the group consisting of PA 6, PA 66 and PA 12, as recited in claims 2 and 8. Col. 2 discloses the inner layer as being a single layer tube preferably consisting of polyolefins, the preferred halogenated polymers including fluorinated homopolyolefins such as PVDF, PTFE or ETFE, as recited in claims 3-5 and 7. **Pfleger** discloses the

recited structure with the exception of forming the inner layer as a smooth inner tube with the outer corrugated tube attached via the inside peaks of the corrugations. The patent to **Kleykamp** discloses a similar hose including a corrugated outer tube made of a polymeric material and having alternating projections and recesses with the recesses having inwardly facing convex surfaces and an inner tube made of a polymeric material and having smooth inside and outside surfaces with the outside surfaces of the inner tube bonded against the convex surfaces. Col. 4, lines 4-10 disclose that the two layers may be formed from the same or different polymeric materials. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the hose of **Pfleger** having a smooth inner as suggested by **Kleykamp** in order to form a tube for transporting fluids that does not present the problems of fluid foaming, noise or head loss.

2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over

**Pfleger** in view of U.S. 6,776,195 to **Blasko et al** and **Kleykamp**.

The patent to **Pfleger** discloses a conduit for transporting automobile fluids, the conduit comprising a multi-layer tube comprising an inner layer (4) based on a fluorinated thermoplastic material, a corrugated outer tube (2) which is in contact with the inner tube, which is made of a thermoplastic material based on

polyamide and means (3) for connecting together the inner and outer layers, as recited in claim 1. The burst-resistant external layer (2) is a single layer tube and preferably consists of polyamides selected from the group consisting of PA 6, PA 66 and PA 12, as recited in claims 2 and 8. Col. 2 discloses the inner layer as being a single layer tube preferably consisting of polyolefins, the preferred halogenated polymers including fluorinated homopolyolefins such as PVDF, PTFE or ETFE, as recited in claims 3-5 and 7. **Pfleger** discloses the recited structure with the exception of including the EFEP as one of the fluorinated thermoplastics and not forming the inner layer as a smooth inner tube with the outer corrugated tube attached via the inside peaks of the corrugations. The patent to **Blasko et al.** discloses a tubular polymeric composite for tubing and hose constructions utilized in fuel and oil transfer. Col. 6, lines 61-66, discloses that the inner layer (18) is a fluoropolymer, possibly an ETFE based material that has been modified such as an EFEP. This modified material is able to be fusion bonded by co-extrusion or molding to nylon or other polyamide materials at lower temperatures. The patent to **Kleykamp** discloses a similar hose including a corrugated outer tube made of a polymeric material and having alternating projections and recesses with the recesses having inwardly facing convex surfaces and an inner tube made of a polymeric material and having smooth inside and outside surfaces with the

outside surfaces of the inner tube bonded against the convex surfaces. Col. 4, lines 4-10 disclose that the two layers may be formed from the same or different polymeric materials. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the hose of **Pfleger**, including EFEP as the inner fluorinated thermoplastic material, as suggested by **Blasko et al.** in order to provide a fluoropolymer that may easily bond with polyamide within a range of the preferred fusion bonding temperature of the rein. It also would have been obvious to one having ordinary skill in the art to one having ordinary skill in the art at the time the invention was made to form the hose of **Pfleger** to have a smooth inner as suggested by **Kleykamp** in order to form a tube for transporting fluids that does not present the problems of fluid foaming, noise or head loss.

3. Claims 1-5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kleykamp** in view of **Pfleger**.

The patent to **Kleykamp** discloses a hose including a corrugated outer tube made of a polymeric material and having alternating projections and recesses with the recesses having inwardly facing convex surfaces and an inner tube made of a polymeric material and having smooth inside and outside surfaces with the outside surfaces of the inner tube bonded against the convex surfaces.

Col. 4, lines 4-10 disclose that the two layers may be formed from the same or different polymeric materials. **Kleykamp** does not specifically disclose the outer layer as a polyamide or the inner layer as fluorinated thermoplastic material. The patent to **Pfleger** discloses a multilayer corrugated conduit for transporting automobile fluids, the conduit comprising a multi-layer tube comprising an inner layer (7) based on a thermoplastic elastomer material, a corrugated outer tube (5) which is in contact with the inner tube, which is made of a thermoplastic material based on polyamide and means (3) for connecting together the inner and outer layers, as recited in claim 1. The burst-resistant external layer (5) is a single layer tube and preferably consists of polyamides selected from the group consisting of PA 6, PA 66 and PA 12, as recited in claims 2 and 4. Col. 2 discloses the inner layer as being a single layer tube comprising a fluorinated thermoplastic, such as ETFE and PVDF, as recited in claims 3 and 5. It would have been obvious to one having ordinary skill in the art at the time to modify the hose of **Kleykamp**, the outer layer of a polyamide, the inner layer of a fluorinated thermoplastic, as suggested by **Pfleger** in order to provide a corrugated pipe having an external, corrugated layer that is corrosion resistant and burst resistant and a smooth inner bore that is chemically resistant to fluid that is transported through it.

*Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents to Pfleger '532 and '864 are pertinent to Applicant's invention in disclosing a coolant transporting pipe having a corrugated outer pipe based on polyamide and an inner tube based on a thermoplastic material that is a blend of polypropylene and an elastomer. The patents to Bradshaw et al., Agren et al., Kilcup, Fochler, Hegler, Fisher et al. '599 and '279 and Kanao are all pertinent to Applicant's invention in disclosing smooth bore pipes with corrugated external surfaces.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Patrick F. Brinson** whose telephone number is (571) 272-4897. The examiner can normally be reached on M-F 7:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Michael Y. Mar** can be reached on (571) 272-4906. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Patrick F. Brinson  
Primary Examiner  
Art Unit 3754

P. F. Brinson  
March 21, 2005